

PATENT COOPERATION TREATY

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PCT/EP2004/004687

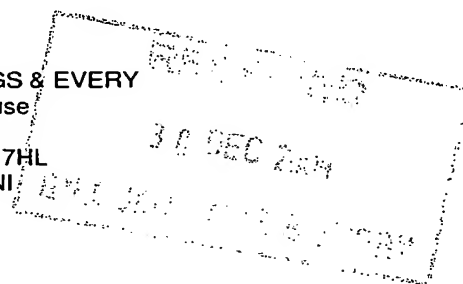
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Broadgate House
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Applicant
RASMUSSEN, Ole-Bendt

The International Bureau transmits herewith the following documents:

- ☐ copy of the international application as published by the International Bureau on under No. WO
- ☒ copy of international application as republished by the International Bureau on 23 December 2004 (23.12.2004) under No. WO 2004/094129
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(71) Applicant and

(72) Inventor: RASMUSSEN, Ole-Bendt [DK/CH]; Sagenstrasse 12, CH-6318 Walchwil (CH).

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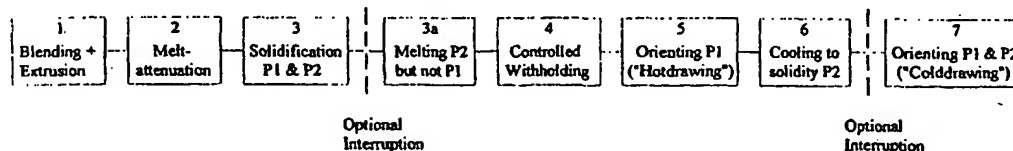
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(54) Title: METHOD OF MANUFACTURING ORIENTED FILMS FROM ALLOYED THERMOPLASTIC POLYMERS, APPARATUS FOR SUCH MANUFACTURE AND RESULTING PRODUCTS



(57) Abstract: A blend of two partly incompatible polymers is extruded to form a film under conditions such that the alloy in the blend comprises fibrils extending mainly in one direction, the width and thickness of each fibril having a mean lower than 5 µm, the fibrils being formed of the polymer component having a higher melting point, and the fibrils being surrounded by a matrix of the second polymer, which has a lower coefficient of elasticity. The special morphology is achieved by providing grids (301, 302) in a grid chamber upstream of the exit orifice of the extrusion die, and by sequential hot stretching at a temperature at which the higher melting polymer is at least partly crystalline, and cold stretching, at which both polymers are substantially solid. The second, cold stretching step, is carried out under conditions to give an elongation at break at 20°C of at least 25%. The films are of particular value for forming crosslaminates having high shock resistance. Preferably the polymer forming fibrils is polypropylene and the polymer forming the matrix is an ethylene polymer, preferably LLDPE.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B29C55/06 B29C67/24 B29C47/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 337 719 A (JSP CORP) 18 October 1989 (1989-10-18) page 2, line 49 - line 52 page 3, line 5 - line 6 page 3, line 12 - line 17	49-66
X	US 2 262 989 A (CONKLIN FREDERICK R ET AL) 18 November 1941 (1941-11-18) column 5, line 9 - line 54; figures 1,5,8	32-48
X	PATENT ABSTRACTS OF JAPAN vol. 006, no. 204 (M-164), 15 October 1982 (1982-10-15) & JP 57 110422 A (SEKISUI KASEIHIN KOGYO KK), 9 July 1982 (1982-07-09) abstract ----- -/-	32-48

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Attalla, G

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 95/11939 A (DU PONT) 4 May 1995 (1995-05-04) page 7, line 14 - line 20 page 9, line 24 - page 11, line 7 -----	1,49,56, 60,67,73
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